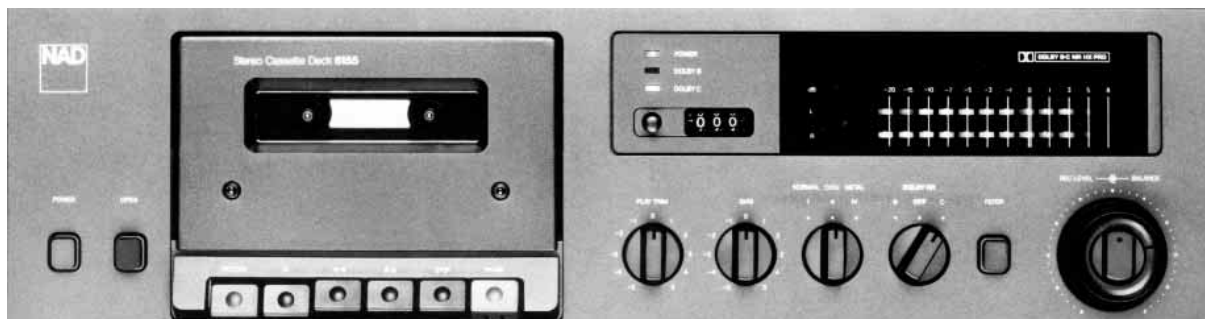




6155 Cassette Deck

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Please note that this document contains the text from the original product brochure, and some technical statements may now be out of date



THE FIRST SEMI-PROFESSIONAL CASSETTE DECK FROM NAD

The NAD 6155 is the finest cassette deck NAD has ever designed. Its outstanding performance, in both recording and in playback, places it on a par with the best cassette decks on the market - machines costing hundreds of dollars more than the 6155. How can such performance be achieved at the 6155's modest cost? NAD concentrates its engineering budget entirely on those aspects of design and manufacturing that affect the audible performance of the recorder, while omitting cosmetic frills and features that have little or nothing to do with how well the machine reproduces the true sound of music. The NAD 6155's superior performance is derived mainly from three design elements. One is an NAD "first," and the other two are found in only a few other cassette decks costing far more than the 6155.

A CLOSER LOOK:

Published specifications and test reports confirm that many cassette recorders can deliver accurate, wide-range response under ideal laboratory-test conditions. But in everyday listening accurate tape playback is elusive, for several reasons:

- Different brands of tape vary widely in high-frequency sensitivity, so even when a recorder's tape selector is set to the nominally correct position, different brands of tape may produce sound that is brighter or duller than the original music.
- Because of the slow speed of cassette recording, tape saturation at high frequencies is a universal problem.
- At the slow speed of cassette playback, high-frequency rolloffs will occur if there is even a very small difference in head "azimuth" between the machine used to record the tape and the deck used for playback. ("Azimuth" refers to the orientation of the head gap, which must be exactly at right angles to the direction of the tape motion.)
- Treble losses may occur if a tape is accidentally exposed to the magnetic field of a loudspeaker, an amplifier's power transformer, or a magnetised tape head.
- Despite the standardisation of 120 and 70 microsecond playback equalisation for cassette decks, there are significant brand-to-brand differences among recorders, so that tapes recorded on one machine may not reproduce accurately on another deck.

THREE STATE-OF-THE-ART FEATURES:

1. PLAY TRIM - A FIRST FROM NAD

The NAD 6155 is the first cassette deck to feature the new Play Trim circuit, an innovation that corrects the high-frequency aberrations which, for many years, have limited the fidelity of cassette recordings. NAD developed the Play Trim circuit in collaboration with Dolby Laboratories, to deal with the variations in high-frequency response that often occur in cassette recordings - especially in tapes that were recorded on one machine and are being played on another.

These errors arise from tape saturation at high frequencies, from biasing that didn't match the tape when the recording was made, and from differences in equalisation and head azimuth among recorders. Such errors are magnified by Dolby NR decoding because they cause the Dolby NR circuits to mistrack, often resulting in dull sound.

Play Trim is a special high-frequency playback equalisation circuit, located ahead of the Dolby NR circuit so that it can be used to restore accurate playback response before Dolby NR decoding takes place. As a result the playback of all cassettes can now approach the high-fidelity ideal: accurate reproduction of every original sound, with all of its brilliance and clarity preserved

These several causes of variable high-frequency playback response are significant by themselves, but when decoded by the noise-reduction circuits, these errors are greatly magnified. For example, mild tape saturation or skewing that rolls off the highs above 8kHz will cause a slight loss of crispness and "air" in the sound. But if that rolloff alters the tracking of the Dolby noise-reduction circuit, it will depress response at lower frequencies as well, so that the sound becomes dull in the mid-range too. Since the playback error occurred ahead of the noise-reduction decoding, this problem cannot be solved simply by adjusting amplifier tone controls.

The solution: Play Trim. The new Play Trim control not only corrects these common high-frequency aberrations but also prevents the consequent mistracking of the noise-reduction circuits. The Play Trim control is easy to use: you simply adjust it in playback to obtain musically correct tonal balance, removing any false brightening or dulling of the sound. The Play Trim circuit is a narrow-band equaliser that operates in the top two octaves of the audio spectrum, providing an adjustable boost or cut of up to ± 3 dB at 10 kHz and 6 dB at 20 kHz. The key to its success is its location in the signal path, ahead of the Dolby NR decoder. Since any high-frequency errors are corrected before Dolby NR decoding, playback fidelity can be as excellent in everyday use as it is in idealised lab tests.

2. DOLBY HX PRO HEADROOM EXTENSION

At high recording levels, overbiasing rolls off high frequencies and causes the tape to saturate at a reduced level. This yields a dull sound which is commonly assumed to be an inevitable characteristic of cassette recordings. The 6155 includes the Dolby HX Pro headroom extension circuit, which constantly monitors the level and frequency content of the input signal during recording, and it automatically varies the amount of ultrasonic bias so that the total effective bias (including the effect of the high audio frequencies) is optimum at all times. Consequently, when you are recording a strong low-frequency signal, the bias level increases to an unusually high value, providing remarkably low distortion at high recording levels. When the input signal has strong highs, the bias decreases to provide a dramatic improvement in high-frequency saturation level, preventing any dulling of the highs.

As a result, the useful dynamic range of the 6155 at both low and high frequencies is greater with ferric and chrome tapes than the range many other decks achieve with costly metal tape. Best of all, the operation of the Dolby HX Pro circuit is totally automatic. And since it works only during recording, the superior quality of the resultant recording will be evident wherever the tape is played - in the car, in a personal portable player with headphones, or in the 6155 itself.

3. AMORPHOUS HEAD

The NAD 6155 contains a costly amorphous record/play head that is remarkably free of flux saturation even at the highest recording levels. In many cassette recorders, at low and middle frequencies the head saturates before the tape does, and that is what limits the useful dynamic range of the recorder. With the amorphous head you can record musical peaks at levels substantially higher than 0 dB (Dolby NR reference level), confident that the sound will remain distortion-free.

The ability of the amorphous head to handle extra-high signal levels without saturating is especially important with high-bias (chrome) and metal-particle tape formulations. These tapes excel in high-frequency dynamic range, allowing you to capture the full brilliance and power of cymbals, bells, brass, and synthesizers in clear, airy sound. Play Trim, Dolby HX Pro, and the amorphous head add up to a level of performance, in both recording and playback, that normally is found only in tape decks that cost far more than the 6155.

While the 6155 may be a mid-priced machine, it was designed to work at its best with premium-quality tapes, producing first-class recordings. In addition, its wide-range response, low flutter, and very quiet electronics provide a superb play-back environment for the many high-quality pre-recorded music cassettes that are available today.

Speed accuracy	±1%
Wow and flutter	<0.06% JIS weighted, RMS
	<0.1% DIN weighted, peak
Frequency response	30Hz - 20kHz ±3dB
MPX filter response	Flat within 1dB to 15kHz
Harmonic distortion	<0.3% at -10dB
THD at 0dB	Normal tape <0.5%
	CrO ₂ , Metal <1.5%
Signal/Noise ratio	Dolby off 59dB
	Dolby B 68dB
	Dolby C 77dB
Channel separation	40dB broadband
Erase	>70dB at 1kHz
Input sensitivity	110mV
Input impedance	7kΩ
Maximum input level	25V
Output level at 0dB	580mV
Output impedance	1kΩ
Remote	No
NAD Link	No
PHYSICAL SPECIFICATIONS	
Dimensions (W x H x D)	420 x 120 x 250mm
Net weight	4.8kg
Shipping weight	5.6kg

Dimensions are of unit's cabinet without attached feet; add up to 18mm for total height.

Dimension depth excludes terminals, sockets, controls and buttons.